

Title (en)

Bordetella pertussis toxin S1 subunit with altered toxicity

Title (de)

Bordetella pertussis-Toxin S1 Untereinheit mit veränderter Toxizität

Title (fr)

Sous-unité S1 de la toxine de Bordetella pertussis ayant une toxicité modifiée

Publication

EP 0322533 B1 19950524 (EN)

Application

EP 88117742 A 19881025

Priority

IT 2248187 A 19871102

Abstract (en)

[origin: EP0322533A1] Immunologically active polypeptides with no or reduced toxicity useful for the preparation of an antipertussis vaccine. Method for the preparation of said polypeptides which comprises, cultivating a microorganism transformed with a hybrid plasmid including the gene/s which codes for at least one of said polypeptides in a suitable medium and recovering the desired polypeptide from the cells or from the culture medium.

IPC 1-7

C12N 15/31; **A61K 39/10**

IPC 8 full level

A61K 39/10 (2006.01); **A61P 31/04** (2006.01); **C07H 21/04** (2006.01); **C07K 14/00** (2006.01); **C07K 14/195** (2006.01); **C07K 14/235** (2006.01); **C07K 14/41** (2006.01); **C12N 1/20** (2006.01); **C12N 1/21** (2006.01); **C12N 15/09** (2006.01); **C12P 21/00** (2006.01); **C12P 21/02** (2006.01); **A61K 39/00** (2006.01); **C12R 1/19** (2006.01)

CPC (source: EP US)

A61P 31/04 (2018.01 - EP); **C07K 14/235** (2013.01 - EP US); **A61K 39/00** (2013.01 - EP US)

Citation (examination)

EP-A1-0 306 318

Cited by

US5332583A; EP0396964A1; EP0688868A1; US5085862A; US6018022A; US5977304A; US5856122A; EP0646599A3; GB2351905A; GB2351905B; US5244657A; US5786189A; US6040427A; EP0352250A3; WO2014024026A1; US8916173B2; EP0629696A1; EP0320866A3; US5358868A; WO2004108154A1; WO2011003920A1; EP2277540A2; EP2682127A1; EP3488865A1; US6168928B1; WO2012136823A1; EP2267005A1; US8398986B2; WO2008028956A1; EP3492097A1

Designated contracting state (EPC)

AT BE CH DE ES FR GB GR LI LU NL SE

DOCDB simple family (publication)

EP 0322533 A1 19890705; **EP 0322533 B1 19950524**; AT E123062 T1 19950615; CA 1341582 C 20081007; DE 3853876 D1 19950629; DE 3853876 T2 19951005; ES 2072857 T3 19950801; HK 192995 A 19951229; IT 1223334 B 19900919; IT 8722481 A0 19871102; JP 2728275 B2 19980318; JP 2857105 B2 19990210; JP H01165370 A 19890629; JP H09157293 A 19970617; US 7410646 B1 20080812

DOCDB simple family (application)

EP 88117742 A 19881025; AT 88117742 T 19881025; CA 581889 A 19881101; DE 3853876 T 19881025; ES 88117742 T 19881025; HK 192995 A 19951221; IT 2248187 A 19871102; JP 16034896 A 19960620; JP 27632288 A 19881102; US 26169294 A 19940617